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EXAMINER

WONG, ALLEN C

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/922,142
Filing Date: August 03, 2001
Appellant(s): YAN, YONG

MAILED

MAY 23 2005

Technology Center 2600

Steve Cha
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/14/05.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

Claims 1-5, 7-15, 17-24 and 26-28 are anticipated under 35 USC 102(e) by Chen; and

Claims 6, 16 and 25 are obvious under 103(a) in view of the combination of Chen and Sekiguchi.

(7) *Grouping of Claims*

Group I: Claims 1-5, 7-15, 17-24 and 26-28 are anticipated under 35 USC 102(e) by Chen; and

Group II: Claims 6, 16 and 25 are obvious under 103(a) in view of the combination of Chen and Sekiguchi.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,208,693	CHEN ET AL	3-2001
6,611,628	SEKIGUCHI ET AL	8-2003

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-5, 7-15, 17-24 and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen (6,208,693).

Regarding claim 1, Chen discloses a video object encoding system (col.1, ln.18-21 and col.2, ln.44-49), comprising:

an object evaluation system that evaluates a video object using a predetermined criterion (col.9, ln.57-60; in fig.5, note the steps 510 and 515 discloses that the segmentation of the video object of an image is the evaluation of the video object because when the video object is segmented, the video object is evaluated for identification using predetermined criterion of object or background, ie. "remainder of the image"); and

a mask generation system that generates one of a plurality of mask types for the video object based on the evaluation of the video object (in fig.5, note the step 525, the video object is evaluated for identification so that one of a plurality of mask types can be generated for the video object based on the video object evaluation or segmentation, wherein the masks could be a bounding box with a plurality of identified macroblocks, col.10, lines 3-8).

Regarding claim 2, Chen discloses the video object encoding system of claim 1, wherein the plurality of mask types includes a pixel-based mask (col.6, ln.47-52), a bounding box mask (col.7, ln.11-12), and a macroblock-based mask (col.7, ln.23-30).

Regarding claim 3, Chen discloses the video object encoding system of claim 1, wherein the predetermined criterion examines a shape of the video object (col.4, ln.28-32).

Regarding claim 4, Chen discloses the video object encoding system of claim 1, wherein the predetermined criterion examines a texture of the video object (col.4, ln.28-32).

Regarding claim 5, Chen discloses the video object encoding system of claim 1, wherein the predetermined criterion examines motion information regarding the video object (col.4, ln.66-67).

Regarding claim 7, Chen discloses the video object encoding system of claim 3, wherein the predetermined criterion includes whether an area of the video object shape is substantially similar to an area of a generated bounding box (col.7, ln.11-21 and fig.3).

Regarding claim 8, Chen discloses the video object encoding system of claim 7, wherein the predetermined criterion includes whether an area of a macroblock-based shape generated for the video object is substantially similar to the area of the generated bounding box (col.7, ln.11-21 and fig.3).

Regarding claim 9, Chen discloses the video object encoding system of claim 8, wherein the predetermined criterion includes whether the area of a macroblock-based shape is larger than the area of the video object shape (col.7, ln.11-21 and fig.3).

Regarding claim 10, Chen discloses the video object encoding system of claim 1, further comprising an MPEG-4 encoder (col.1, ln.46-48).

Regarding claim 11, Chen discloses a program product stored on a recordable medium, which when executed, encodes video objects (col.1, ln.18-21 and col.2, ln.44-49), the program product comprising:

program code configured to evaluate a video object using a predetermined criterion (col.9, ln.57-60; in fig.5, note the steps 510 and 515 discloses that the segmentation of the video object of an image is the evaluation of the video object because when the video object is segmented, the video object is evaluated for identification using predetermined criterion of object or background, ie. "remainder of the image"); and

program code configured to generate one of a plurality of mask types for the video object based on the evaluation of the video object (in fig.5, note the step 525, the video object is evaluated for identification so that one of a plurality of mask types can be generated for the video object based on the video object evaluation or segmentation, wherein the masks could be a bounding box with a plurality of identified macroblocks, col.10, lines 3-8).

Regarding claim 12, Chen discloses the program product of claim 11, wherein the plurality of mask types includes a pixel-based mask (col.6, ln.47-52), a bounding box mask (col.7, ln.11-12), and a macroblock-based mask (col.7, ln.23-30).

Regarding claim 13, Chen discloses the program product of claim 11, wherein the predetermined criterion examines a shape of the video object (col.4, ln.28-32).

Regarding claim 14, Chen discloses the program product of claim 11, wherein the predetermined criterion examines a texture of the video object (col.4, ln.28-32).

Regarding claim 15, Chen discloses the program product of claim 11, wherein the predetermined criterion examines motion information regarding the video object (col.4, ln.66-67).

Regarding claim 17, Chen discloses the program product of claim 13, wherein the predetermined criterion includes whether an area of the video object shape is substantially similar to an area of a generated bounding box (col.7, ln.11-21 and fig.3).

Regarding claim 18, Chen discloses the program product of claim 17, wherein the predetermined criterion includes whether an area of a macroblock-based shape generated for the video object is substantially similar to the area of the generated bounding box (col.7, ln.11-21 and fig.3).

Regarding claim 19, Chen discloses the program product of claim 18, wherein the predetermined criterion includes whether the area of a macroblock-based shape is larger than the area of the video object shape (col.7, ln.11-21 and fig.3).

Regarding claim 20, Chen discloses a method for encoding video objects in an object based video communication system (col.1, ln.18-21 and col.2, ln.44-49), comprising the steps of:

evaluating a video object using a predetermined criterion (col.9, ln.57-60; in fig.5, note the steps 510 and 515 discloses that the segmentation of the video object of an image is the evaluation of the video object because when the video object is segmented, the video object is evaluated for identification using predetermined criterion of object or background, ie. "remainder of the image"); and

generating one of a plurality of mask types for the video object based on the evaluation of the video object (in fig.5, note the step 525, the video object is evaluated for identification so that one of a plurality of mask types can be generated for the video

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object based on the video object evaluation or segmentation, wherein the masks could be a bounding box with a plurality of identified macroblocks, col.10, lines 3-8).

Regarding claim 21, Chen discloses the method of claim 20, wherein the plurality of mask types includes a pixel-based mask (col.6, ln.47-52), a bounding box mask (col.7, ln.11-12), and a macroblock-based mask (col.7, ln.23-30).

Regarding claim 22, Chen discloses the method of claim 20, wherein the predetermined criterion examines a shape of the video object (col.4, ln.28-32).

Regarding claim 23, Chen discloses the method of claim 20, wherein the predetermined criterion examines a texture of the video object (col.4, ln.28-32).

Regarding claim 24, Chen discloses the method of claim 20, wherein the predetermined criterion examines motion information regarding the video object (col.4, ln.66-67).

Regarding claim 26, Chen discloses the method of claim 22, wherein the evaluating step includes:

generating a bounding box (col.7, ln.11-12); and

determining if an area of the object shape is substantially similar to an area of the generated bounding box (col.7, ln.11-21 and fig.3).

Regarding claim 27, Chen discloses the method of claim 26, wherein the evaluating step includes generating a macroblock-based shape (col.7, ln.11-21 and fig.3); and determining whether an area of the macroblock-based shape is substantially similar to the area of the generated bounding box (col.7, ln.11-21 and fig.3).

Regarding claim 28, Chen discloses the method of claim 27, wherein the evaluating step includes determining whether the area of a macroblock-based shape is larger than the area of the object shape (col.7, ln.11-21 and fig.3).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6, 16 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (6,208,693) in view of Sekiguchi (6,611,628).

Regarding claims 6, 16 and 25, Chen discloses an object evaluation system, program product and method that evaluate a video object using a predetermined criterion (col.4, ln.28-32; note video object is evaluated based on predetermined criterion such as texture and shape). Chen does not specifically disclose a system, a program product and method wherein the predetermined criterion includes whether the video object shape is substantially circular. However, Sekiguchi teaches a system where the substantial roundness or circularity of a video object shape can be determined (col.14, ln.54-59). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate Sekiguchi's teaching into Chen's video encoding system, program product, and method for efficiently encoding of image features in an accurate, high quality manner (Sekiguchi col.2, ln.19-22).

(11) Response to Argument

Regarding lines 9-11 and 13-14 on page 7 of appellant's arguments about claim 1, appellant asserts that Chen does not disclose "a mask generation system that generates one of a plurality of mask types for the video object based on the evaluation of the video object". The examiner respectfully disagrees. In col.6, ln.47-52, Chen discloses the generation of a shape mask that can be a binary map or a gray scale map for generating the pixel mask for the video object based on the evaluation process in Chen's fig.5. In fig.5, Chen discloses the steps 510 and 515 discloses that the segmentation of the video object of an image is the evaluation of the video object because when the video object is segmented, the video object is evaluated for identification so that one of a plurality of mask types (ie. bounding box with identified macroblocks) can be generated for the video object based on the video object evaluation or segmentation.

Thus, Chen anticipates the present invention of claim 1.

With regards to line 23 on page 7 to line 3 on page 8 of appellant's arguments about independent claims 11 and 20, appellant contends that Chen does not disclose "a mask generation system that generates one of a plurality of mask types for the video object based on the evaluation of the video object". The examiner respectfully disagrees. As stated in the above paragraphs, Chen discloses, in col.6, ln.47-52, that the generation of a shape mask that can be a binary map or a gray scale map for generating the pixel mask for the video object based on the evaluation process in Chen's fig.5. In fig.5, Chen discloses the steps 510 and 515 discloses that the

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segmentation of the video object of an image is the evaluation of the video object because when the video object is segmented, the video object is evaluated for identification so that one of a plurality of mask types (ie. bounding box) can be generated for the video object based on the video object evaluation or segmentation.

Thus, Chen also anticipates claims 11 and 20 for the same reasons as claim 1.

Dependent claims 2-5, 7-10, 12-19, 21-24 and 26-28 are rejected for at least the same reasons as independent claims 1, 11 and 20.

Regarding lines 2-4 on page 9 of appellant's arguments about claim 6, appellant states that Chen fails to teach the limitation "generating one of a plurality of mask types". The examiner respectfully disagrees. Again, as stated above, Chen discloses, in col.6, ln.47-52, that the generation of a shape mask that can be a binary map or a gray scale map for generating the pixel mask for the video object based on the evaluation process in Chen's fig.5. In fig.5, Chen discloses the steps 510 and 515 discloses that the segmentation of the video object of an image is the evaluation of the video object because when the video object is segmented, the video object is evaluated for identification so that one of a plurality of mask types (ie. bounding box) can be generated for the video object based on the video object evaluation or segmentation. Chen does not disclose whether the video object shape is substantially circular. However, in col.14, lines 54-59, Sekiguchi teaches a system where the substantial roundness or circularity of a video object shape can be determined. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate Sekiguchi's teaching into Chen's video encoding system, program product, and method for efficiently

encoding of image features in an accurate, high quality manner, as disclosed in Sekiguchi col.2, ln.19-22.

With regards to lines 14-16 on page 9 of appellant's arguments, appellant mentions that there is no motivation to combine the teachings of Chen and Sekiguchi. The examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to incorporate Sekiguchi's teaching into Chen's video encoding system, program product, and method for efficiently encoding of image features in an accurate, high quality manner, as disclosed in Sekiguchi col.2, ln.19-22.

Regarding lines 20-22 on page 10 of appellant's arguments about claim 6, appellant argues that because the use of Sekiguchi's circular criterion would increase the computational requirements of the processor, one would not be motivated to use a circular search criterion as suggested in the rejection of the Office Action. The examiner respectfully disagrees. The combination of Chen and Sekiguchi is combinable because both Chen (col.8, ln.50-54) and Sekiguchi (col.10, ln.54-59) pertain to the same, analogous MPEG-4 video encoding/decoding environment. Thus, Chen

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and Sekiguchi are useable together because both teachings are applicable in the MPEG-4 ambiance, and thus, the use of Sekiguchi's circular criterion would not increase the computational requirements of the processor. Instead, because of the fact that both Chen and Sekiguchi are used in the MPEG-4 environment, it would have been obvious to one of ordinary skill in the art to incorporate Sekiguchi's teaching into Chen's video encoding system, program product, and method for efficiently encoding of image features in an accurate, high quality manner, as disclosed in Sekiguchi col.2, ln.19-22. Doing so would save computational costs.

With regards to lines 3-6 and lines 10-12 on page 11 of appellant's arguments about claim 6, appellant asserts that Chen fails to establish a prima facie case of obviousness, and that Chen and Sekiguchi fail to generate "one of a plurality of mask types based on an evaluation of an object", as recited in the independent claims 1, 11 and 20. The examiner respectfully disagrees. Again, as stated above, Chen discloses, in col.6, ln.47-52, that the generation of a shape mask that can be a binary map or a gray scale map for generating the pixel mask for the video object based on the evaluation process in Chen's fig.5. In fig.5, Chen discloses the steps 510 and 515 discloses that the segmentation of the video object of an image is the evaluation of the video object because when the video object is segmented, the video object is evaluated for identification so that one of a plurality of mask types (ie. bounding box) can be generated for the video object based on the video object evaluation or segmentation.

Chen does not disclose whether the video object shape is substantially circular. However, in col.14, lines 54-59, Sekiguchi teaches a system where the substantial roundness or circularity of a video object shape can be determined.

The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to incorporate Sekiguchi's teaching into Chen's video encoding system, program product, and method for efficiently encoding of image features in an accurate, high quality manner, as disclosed in Sekiguchi col.2, ln.19-22.

Thus, the combination of Chen and Sekiguchi would be combined to suggest the limitation "the predetermined criterion includes whether the video object shape is substantially circular ", as disclosed in claim 6.

Regarding lines 3-6 on page 12 of appellant's arguments, appellant contends that the combination of Chen and Sekiguchi does not obviate the limitations of claims 16 and 25. The examiner respectfully disagrees. Because the limitations of claims 16 and 25 are similar to the limitation of claim 6, the reasons for rejecting claims 16 and 25 are the same as stated in the above paragraphs for claim 6.

In view of the above paragraphs, claims 6, 16 and 25 are rejected by the combination of Chen and Sekiguchi.

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In conclusion, it is respectfully submitted that the reasons for rejecting claims 1-28 are clearly elucidated in the above analysis.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Allen Wong

Primary Examiner

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AW

May 16, 2005

Conferees

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